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November 19, 2021

The Honorable Brenda Mallory Chair Council on Environmental Quality (CEQ) 730 Jackson Place NW Washington, DC 20506

The Honorable Shalanda Young Director (Acting) Office of Management and Budget (OMB) 725 17th St NW Washington, DC 20503

Re: Docket ID: CEQ 2021-0003

Dear Chair Mallory and Director Young:

Thank you for the opportunity to submit comments on the climate adaptation and resilience plans developed by more than 20 federal agencies in accordance with President Biden's Executive Order 14008.1

The Pew Charitable Trusts applies a rigorous, analytical approach to improve public policy, inform the public, and invigorate civic life. Our conservation efforts—both in the U.S. and abroad—help to preserve wild places and rivers, restore biodiversity, and protect shorelines and pristine landscapes, as well as advance policies and planning that reduce the impacts of climate change. We applaud the administration's whole-of-government approach to address the impacts of climate change and commitments by agencies to improve the resilience of federal assets, programs, and operations.

As communities across the country grapple with the increasing effects of climate change and natural disasters, it is critical that adaptation strategies are deployed that reduce impact to human populations, minimize costs, protect biodiversity, support environmental justice, and utilize natural resources to reduce risks. Pew offers the following principles and recommendations for consideration as agencies finalize and implement their climate adaptation and resilience plans.

Avoid Growing Risk from Natural Disasters

The federal government's vulnerability to natural disasters is large and growing as a result of climate change. Over the past 30 years, more than 900 military sites across the country have

¹ Exec. Order No. 14008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

been impacted by flooding.² In 2016, OMB determined that tens of thousands of federal buildings, structures, and assets with a total replacement cost exceeding \$100 billion are located within the 500-year floodplain.³

Avert New Investments and Assets that will Face Significant Climate Risks

Pew supports agency efforts to assess the extent of the federal government's exposure to natural disasters in addition to undertaking actions that avoid growing those risks moving forward. In particular, agencies must take a robust approach towards implementing the Federal Flood Risk Management Standard (FFRMS). Pew was pleased to see that the measure is a critical feature of the **Department of Homeland Security** and **Department of Housing and Urban Development's** adaptation plans. ^{4,5} The FFRMS is a pragmatic and prudent disaster risk management strategy that will not only help safeguard federal assets but better protect communities and the nation's infrastructure while saving taxpayer resources from avoided flood damage and costs. Given the extensive threat posed by flooding, we strongly urge all agencies to avoid floodplain development and prioritize implementation of the FFRMS to ensure comprehensive federal investments do not amplify current risk and that actions account for future risk.

Pew is also encouraged by the **Department of Commerce's** commitment to support the development of building codes that incorporate climate data.⁶ In addition to efforts aimed at increasing the ability of structures to withstand climate impacts, we recommend agencies avoid locating new federal assets in areas that repeatedly flood or face severe wildfire threats. Taking such steps will help mitigate future growth of the federal government's exposure to climate change and reduce unnecessary damage and repair costs, loss of life, and disruptions to supply chains and services.

Pursue Targeted Land Management Strategies

While wildfire is a natural component of healthy ecosystems, climate change – coupled with a legacy of past management practices – is contributing to longer and more intense fire seasons that increasingly threaten public safety and federal assets while releasing sequestered carbon into the atmosphere. There is a growing need for – and awareness of – targeted management actions to address hazardous fuels across millions of acres of public and private lands. These efforts should be targeted in a way that manages wildfire risk at the landscape level while allowing fire to play its natural role in restoring function and resiliency to forest and grassland

² U.S. Department of Defense, "Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey Report," (Feb. 23, 2018), https://www.acq.osd.mil/eie/Downloads/Congress/Climate-Related%20Risk%20to%20DoD%20Infrastructure%20(SLVAS)%20Report.pdf.

³ Office of Management and Budget, "Climate Change: The Fiscal Risks Facing the Federal Government," (Nov 2016), https://obamawhitehouse.archives.gov/sites/default/files/omb/reports/omb_climate_change_fiscal_risk_re port.pdf.

⁴ U.S. Department of Homeland Security, "Department of Homeland Security Climate Action Plan: Integrating Climate Adaptation into the Department to strengthen mission operations and infrastructure," (Oct 2021), https://www.sustainability.gov/pdfs/dhs-2021-cap.pdf.

⁵ U.S. Department of Housing and Urban Development, "U.S. Department of Housing and Urban Development Climate Adaptation Plan," (Oct 2021), https://www.sustainability.gov/pdfs/hud-2021-cap.pdf.

⁶ U.S. Department of Commerce, "Department of Commerce 2021 Climate Action Plan for Adaptation and Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/doc-2021-cap.pdf.

ecosystems. They should also be carried out in a manner that considers the impacts of fire and wildfire management on socially vulnerable populations, including Indigenous and rural communities, that may lack sufficient resources to cope with the economic and environmental shocks and uncertainty associated with wildfire.

Pew appreciates that the climate adaptation plans prepared by the **Departments of Agriculture** and **Interior** recognize the value of the ecosystem services provided by public lands and waters, and the co-benefits that climate adaptation strategies like wildland fire response and mitigation can provide in supporting these services.^{7,8} To help direct investment towards these cobenefits, we recommend that public land managers quantify the value of ecosystem services provided by public lands and waters that would be supported by improved resilience to climate change. As federal agencies work to identify lands that need active management to address wildfire risk, they should also identify areas that are ecologically functional and prioritize their conservation to avoid incurring future costs from the permitting of activities that may degrade their climate resilience and ecological value, as well as their ability to provide ecosystem services, including the conservation of biodiversity.

The **Departments of Agriculture** and **Interior** also highlight the critical role that land and resources management planning can play in developing a framework for addressing climate vulnerabilities and taking adaptation actions. ^{9,10} Since activities on public lands are required by law to conform to the requirements of current management plans, it is critical that these plans reflect the latest science and climate adaptation principles. We recommend that the U.S. Forest Service and Bureau of Land Management prioritize the revisions of outdated land and resource management plans by allocating staff and budget to this activity. Because climate-related risks like wildfire and drought do not recognize administrative boundaries, we recommend that agencies coordinate these planning activities at the landscape level, and work with states, Tribes, and others to ensure that management strategies are consistent.

Enhance Partnerships with States and Communities

The growing threat of climate change places a premium on the need for all levels of government to act now to reduce the magnitude and frequency of future impacts and costs. As of June 2021, more than 15 states—coastal and inland, and with governments from across the political spectrum—are developing innovative and comprehensive resilience strategies that emphasize watershed-scale solutions, updated development codes, and the use of nature-based mitigation strategies. To support these efforts Pew provides states and localities with nonpartisan technical assistance, convenes networking and data-sharing opportunities, and advocates for policies that can help officials address current and future flood risks, promote equity in the implementation and resourcing of adaptation and mitigation initiatives, and

⁷ U.S. Department of Agriculture, "Action Plan for Climate Adaptation and Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/usda-2021-cap.pdf.

⁸ U.S. Department of the Interior, "Department of the Interior Climate Action Plan 2021," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

⁹ U.S. Department of Agriculture, "Action Plan for Climate Adaptation and Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/usda-2021-cap.pdf.

¹⁰ U.S. Department of the Interior, "Department of the Interior Climate Action Plan 2021," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

deploy taxpayer dollars responsibly. Since 2019, Pew has been convening the State Resilience Planning Group, the Nation's most established network of chief resilience officers, agency directors, and other executive branch officials tasked with developing and implementing statewide resilience strategies. Members from coastal and inland states alike share best practices and lessons learned during specialized workshops and roundtable discussions with subject-matter experts, while building peer-to-peer relationships.

Pew's partnership efforts related to climate adaptation also involve collaborating with the Western Association of Fish and Wildlife Agencies in a series of workshops dedicated to translating the science of wildlife migrations into durable policy and conservation actions. This work has recently extended to include the Native American Fish and Wildlife Society and individual tribal nations across the western U.S. Joint efforts such as these will be critical to generate a comprehensive approach to solving pressing issues in relation to climate change.

Increase Adaptation Resources and Incentives

We recognize the need for sustained federal assistance to support local efforts to reduce climate risks, and support agency actions that prioritize existing disaster mitigation programs, such as the **Department of Homeland Security's** commitment to supporting the continuation of the Federal Emergency Management Agency's Building Resilient Infrastructure and Communities program.¹²

We are also encouraged by agency plans, such as the **Department of Transportation**, **Department of Commerce**, and **Department of Housing and Urban Development**, that focus on increasing adaptation and resilience resources, technical assistance, data, and tools that can better empower communities to make climate-informed planning, development, and land use decisions. Pew recommends that local, tribal, and state partners be engaged at the onset of these efforts to optimize usefulness for recipients and end users.

To help foster a whole-of-government approach to increasing the Nation's resilience to climate change, we urge agencies to better incentivize action among localities and states. This could involve the Federal Emergency Management Agency finalizing a rulemaking, initiated in 2017, that would establish a public assistance deductible that rewards states for pre-disaster

¹¹ The Pew Charitable Trusts, "Pew-Led Network Helps States Plan for Rising Costs and Impacts of Flooding," (Dec 2020) https://www.pewtrusts.org/en/research-and-analysis/articles/2020/12/14/pew-led-network-helps-states-plan-for-rising-costs-and-impacts-of-flooding.

¹² U.S. Department of Homeland Security, "Department of Homeland Security Climate Action Plan: Integrating Climate Adaptation into the Department to strengthen mission operations and infrastructure," (Oct 2021), https://www.sustainability.gov/pdfs/dhs-2021-cap.pdf.

¹³ U.S. Department of Transportation, "Climate Action Plan: Revitalizing Efforts to Bolster Adaptation & Increase Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/dot-2021-cap.pdf.

¹⁴ U.S. Department of Commerce, "Department of Commerce 2021 Climate Action Plan for Adaptation and Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/doc-2021-cap.pdf.

¹⁵ U.S. Department of Housing and Urban Development, "U.S. Department of Housing and Urban Development Climate Adaptation Plan," (Oct 2021), https://www.sustainability.gov/pdfs/hud-2021-cap.pdf.

mitigation investments and actions, or convening a stakeholder group to develop similar constructs that prompt state investment in climate resiliency activities and planning. 16,17

Account for Equity and Environmental Justice

A whole-of-government approach must also consider how climate impacts and mitigation alike will affect all populations, including low-income communities, underrepresented communities, communities of color, Insular Areas, and Tribes. We appreciate that several Departments' Climate Adaptation Plans specifically address equity and environmental justice issues. For instance, the **Department of the Interior** identified climate equity as one of its five climate change adaptation actions. 18 Likewise, one of the **Department of Transportation's** five guiding principles involves giving priority to communities and individuals that are most vulnerable to climate impacts. 19 The benefits of agency actions could be enhanced by adding an equity and social resilience lens to climate strategies. For example, the U.S. Forest Service could consider how its efforts to mitigate, respond to, and rehabilitate forests after wildfires will affect the social vulnerability²⁰ of communities that face additional challenges in recovering from catastrophic disasters, or how protecting clean drinking water sources within the National Forest System could reduce water treatment costs for small rural communities. Agencies with land and species management responsibilities could benefit from additional consultation with Indigenous communities to better incorporate traditional ecological knowledge into conservation and climate mitigation strategies, an approach identified in the **Department of** the Interior's Climate Adaptation Plan.²¹

Prioritize Nature-based Solutions

Healthy lands, rivers, coasts, and wildlife can sustain local communities with clean air, affordable food and water, and strong tourism and outdoor recreation industries. They also have an important role in mitigating the impacts of flooding and other natural disasters. Research demonstrates nature-based solutions, including reducing impervious surfaces, conserving open spaces, and restoring streams and wetlands, are effective and often cost less to maintain than traditional flood-control strategies.²² Pew commends actions proposed by the **Department of Commerce** that prioritize engaging with and providing technical assistance to

¹⁶ Federal Emergency Management Agency, "Establishing a Deductible for FEMA's Public Assistance Program," (Jan. 12, 2017), https://www.federalregister.gov/documents/2017/01/12/2017-00467/establishing-a-deductible-for-femas-public-assistance-program.

¹⁷ The Pew Charitable Trusts, public comments in response to the Federal Emergency Management Agency's proposed rulemaking "Cost of Assistance Estimates in the Disaster Declaration Process for the Public Assistance Program," (Feb. 11, 2021), https://www.pewtrusts.org/-/media/assets/2021/02/pew-comments-fema-2020-0038.pdf.

¹⁸ U.S. Department of the Interior, "Department of the Interior Climate Action Plan 2021," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

¹⁹ U.S. Department of Transportation, "Climate Action Plan: Revitalizing Efforts to Bolster Adaptation & Increase Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/dot-2021-cap.pdf.

²⁰ Centers for Disease Control and Prevention, "CDC Social Vulnerability Index," (Accessed Nov. 16, 2021), https://www.atsdr.cdc.gov/placeandhealth/svi/fact_sheet/pdf/SVI_FactSheet_v10152020-H.pdf.

²¹ U.S. Department of the Interior, "Department of the Interior Climate Action Plan 2021," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

²² Thorne, Karen, et al., "U.S. Pacific Coastal Wetland Resilience and Vulnerability to Sea-Level Rise, Science Advances," Vol 4, Issue 2 (Feb 2018) https://www.science.org/doi/10.1126/sciadv.aao3270.

communities centered around resilience efforts that involve implementing habitat restoration and nature-based approaches.²³ Protection of the Nation's headwaters is one of the original and fundamental functions of the National Forest System, which provides approximately 20 percent of the United States' supply of clean water. Healthy national forests, which prioritize ecological sustainability as required by U.S. Forest Service's 2012 planning rule,²⁴ are critical for continuity of this vital ecosystem service, especially in the face of climate change. Human disturbances, such as irresponsible commercial timber harvest, river barrier construction, and route development, can exacerbate the risk posed by climate change for continuing to provide this service. We encourage all agencies to consider the economic, community, and adaptation benefits of nature-based solutions, habit restoration, and ecosystem preservation when carrying out priority actions.

Consider the Need for Relocation

Some agency plans, such as the **Department of Homeland Security**, **Department of Transportation**, and **Department of the Interior** note current infrastructure that does not consider and integrate climate adaptation and resilience into its design, construction, and siting could require relocation or even being abandoned in certain circumstances as a result of climate impacts.^{25,26,27} This could have significant implications for the federal government given many existing assets are decades old and not designed to account for climate change. To gain a comprehensive understanding regarding the extent of this risk, agencies should consider developing an inventory of federal assets that may need to be relocated due to growing climate threats, such as sea level rise, heavier downpours, and catastrophic wildfire. This information could yield the need for agencies to establish managed retreat strategies in instances where proactive relocation is a cost-effective alternative to the damage and repair costs expected from climate impacts over an asset's design life.

The potential need for relocation extends beyond federally owned assets. Some agencies, such as the **Department of Homeland Security** and the **Department of Housing and Urban Development**, already oversee programs that support voluntary property buyouts. ^{28,29} As agencies carry out efforts to integrate climate resilience into grant and loan programs, Pew urges managed retreat strategies be incorporated to create additional opportunities for individuals and communities seeking to move away from areas at risk to climate impacts.

²³ U.S. Department of Commerce, "Department of Commerce 2021 Climate Action Plan for Adaptation and Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/doc-2021-cap.pdf.

²⁴ National Forest System Land Management Planning, 36 C.F.R 219 (2012).

²⁵ U.S. Department of Homeland Security, "Department of Homeland Security Climate Action Plan: Integrating Climate Adaptation into the Department to strengthen mission operations and infrastructure," (Oct 2021), https://www.sustainability.gov/pdfs/dhs-2021-cap.pdf.

²⁶ U.S. Department of Transportation, "Climate Action Plan: Revitalizing Efforts to Bolster Adaptation & Increase Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/dot-2021-cap.pdf.

²⁷ U.S. Department of the Interior, "Department of Interior Climate Action Plan," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

²⁸ Federal Emergency Management Agency, Hazard Mitigation Grants (Accessed Nov. 16, 2021), https://www.fema.gov/grants/mitigation.

²⁹ U.S. Department of Housing and Urban Development, Community Development Block Grant Programs (Accessed Nov. 16, 2021), https://www.hudexchange.info/programs/cdbg/.

Protect and Enhance Biodiversity

Our nation's lands, rivers, and oceans sustain natural communities. Conserving those lands and waters is critical to protecting biodiversity, particularly in a changing climate. The **Department** of the Interior identified biodiversity and ecosystems as one of five key vulnerabilities from climate change with a focus on ecological and landscape connectivity as a critical aspect of its approach to climate mitigation and adaptation.³⁰ Similarly, the **Department of Transportation** identified the preservation of biodiversity and ecosystems as one of its guiding principles.³¹ Opportunities for conservation abound on the more than 640 million acres of land held by the federal government. In particular, the Bureau of Land Management and the U.S. Forest Service's land and resource management planning processes offer tools to identify and adopt conservation-oriented management strategies for lands and waters. Land management agencies should explore partnerships with other federal agencies, states, and Tribes in order to take a landscape approach to conservation, ecosystem resilience, and adaptation, and can use these planning processes to protect migratory corridors based on known wildlife habitat and movement data; identify and conserve nationally significant landscapes and waterways; and protect ecosystems, native species, and sustainable resources for vulnerable communities, including hunting opportunities and subsistence foods.

Federal agencies can further preserve biodiversity by limiting fossil fuel development – protecting terrestrial and aquatic habitat that sustain healthy ecosystems and serve as carbon sinks while limiting new emissions of greenhouse gases – and adopting mitigation strategies to offset the potential adverse impacts of renewable energy development on our nation's land and waters. We appreciate **Interior's** recognition of the need to work with stakeholders and Tribal nations on energy goals and siting.³² We recommend a holistic planning approach to renewable energy development, such as the one modeled by the 2016 California Desert Renewable Energy Conservation Plan.³³

Preserve and Restore Ecological Connectivity

Habitat fragmentation is the leading cause of biodiversity decline worldwide, constraining options for wildlife to adapt or relocate in response to a changing climate. Roads, highways, other components of our transportation system and many types of water infrastructure such as dams and culverts are a leading cause of habitat fragmentation. Agencies can build on existing tools to address fragmentation and increase the resilience of fish and wildlife to climate impacts while enhancing biodiversity. The National Fish and Wildlife Foundation's "Improving Habitat Quality in Western Big Game Migration Corridors and Habitat Connectivity" grant program, supported by funding from the **Department of the Interior**, offers many examples of infrastructure projects that improve landscape permeability and encourage the safe migration

³⁰ U.S. Department of the Interior, "Department of the Interior Climate Action Plan 2021," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

³¹ U.S. Department of Transportation, "Climate Action Plan: Revitalizing Efforts to Bolster Adaptation & Increase Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/dot-2021-cap.pdf.

³² U.S. Department of the Interior, "Department of the Interior Climate Action Plan 2021," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

³³ Bureau of Land Management, "California Desert Renewable Energy Conservation Plan," (Accessed Nov. 16, 2021), https://www.blm.gov/programs/planning-and-nepa/plans-in-development/california/desert-renewable-energy-conservation-plan.

of wildlife. Similarly, the **Department of Transportation** has supported numerous projects that allow wildlife to move safely across roadways, reducing vehicle collisions while preserving wildlife migration routes. The Department could take additional action to address and mitigate the ways in which climate change and the transportation system interact to degrade ecosystems by including habitat fragmentation as a key consideration in the design and use of climate and ecosystem-friendly transportation infrastructure. Finally, both the National Oceanic and Atmospheric Administration's Office of Habitat Conservation's Restoration Center and the U.S. Fish and Wildlife Service have deep expertise in projects that restore connectivity to fragmented aquatic habitat. The **Department of Commerce** has identified this work as a key component of its action plan, and the **Department of the Interior's** Climate Action Plan proposes to measure performance of strategies to address habitat fragmentation.^{34,35} We recommend that these agencies continue to work with other relevant agencies to explore collaborative approaches to restoring aquatic habitat connectivity.

Optimize Global Impact

Pew appreciates agency actions that involve enhancing resilience internationally given the global scale of threats posed by climate change. As the **State Department** develops joint efforts with host countries to improve local infrastructure, we encourage that projects be considered that help conserve or restore coastal wetlands.³⁶ These ecosystems both store carbon and help vulnerable communities and infrastructure adapt to a changing climate by stabilizing shorelines and serve as a buffer from storms. Additionally, to address the significant untapped global potential of coastal wetlands restoration to enhance climate resilience, the National Oceanic and Atmospheric Administration should consider ways to expand knowledge sharing and technical assistance abroad.

Ensuring a comprehensive understanding of carbon emissions and sinks can help inform international climate plans; however, numerous countries have identified significant research gaps with respect to adaptation and greenhouse gas accounting. Pew recommends the **Environmental Protection Agency** consider these needs when delivering on their commitment to develop nationally and internationally relevant climate research and information.³⁷ We also urge the agency to consider assisting other countries in the creation and management of greenhouse gas inventories, including accounting for coastal wetlands, which could enhance global climate accountability and inform Nationally Determined Contributions required under the Paris Agreement.

Pew appreciates the commitment of federal agencies to develop comprehensive adaptation plans that address the growing threat of climate change. We stand ready to work with the administration and agencies to incorporate these principles and our recommendations of

³⁴ U.S. Department of Commerce, "Department of Commerce 2021 Climate Action Plan for Adaptation and Resilience," (Oct 2021), https://www.sustainability.gov/pdfs/doc-2021-cap.pdf.

³⁵ U.S. Department of the Interior, "Department of Interior Climate Action Plan," (Oct 2021), https://www.sustainability.gov/pdfs/doi-2021-cap.pdf.

³⁶ U.S. Department of State, "U.S. Department of State Climate Adaptation and Resilience Plan," (Oct 2021), https://www.sustainability.gov/pdfs/state-2021-cap.pdf.

³⁷ U.S. Environmental Protection Agency, "U.S. Environmental Protection Agency Climate Adaptation Action Plan," (Oct 2021), https://www.sustainability.gov/pdfs/epa-2021-cap.pdf.

federal actions that can ensure a resilient and sustainable future for federal assets, programs, and operations, and the communities that depend on them.

Sincerely,

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Protecting Coastal Wetlands and Coral Reefs

The Pew Charitable Trusts